

WHAT IS CLAIMED IS:

1. An internal combustion engine comprising:

an engine main body including a cylinder head having intake ports, and a cylinder head cover;

5 fuel injector valves disposed to be directed respectively to the intake ports;

an intake manifold installed to a side surface of the cylinder head and outward curved to define a space between the intake manifold and the cylinder head; and

10 a blow-by gas recirculation system for feeding blow-by gas introduced out of the cylinder head cover to each cylinder of the engine main body through an intake system, the blow-by gas recirculation system including a blow-by gas piping which extends from the cylinder head cover to the intake ports for the cylinders, the blow-by gas piping
15 being accommodated within the space defined between the intake manifold and the cylinder head.

2. An internal combustion engine as claimed in Claim 1, wherein the intake manifold is formed of plastic and includes a plurality of branch
20 sections which are contiguous with each other to form a structure like a partition wall, wherein the blow-by gas piping is disposed inside the branch sections in the longitudinal direction of the engine main body.

3. An internal combustion engine as claimed in Claim 1, wherein the
25 fuel injector valves are installed to the cylinder head and respectively located above the intake ports, wherein the blow-gas piping includes a plurality of tip end sections which are located respectively adjacent the fuel injector valves and connected respectively to the intake ports.

30 4. An internal combustion engine as claimed in Claim 3, wherein each of the tip end sections for the intake ports located at opposite end

sections of the engine main body is located one-sided to center of the engine main body in the longitudinal direction of the engine main body relative to the corresponding fuel injector valve.

5 5. An internal combustion engine as claimed in Claim 4, wherein
each of the tip end sections for the intake ports located at other sections
than the opposite end sections of the engine main body is located
one-sided to the center of the engine main body in the longitudinal
direction of the engine main body relative to the corresponding fuel
10 injector valve.

6. An internal combustion engine as claimed in Claim 3, wherein
each tip end section of the blow-by gas piping is installed to a first boss
formed integral with the cylinder head, wherein each fuel injector valve
15 is installed to a second boss formed integral with the cylinder head, the
second boss being contiguous and integral with the first boss.

7. An internal combustion engine as claimed in Claim 3, wherein
each tip end section of the blow-by gas piping is located upstream of a
20 fuel ejection opening of the corresponding fuel injector valve with respect
to gas flow within the intake port.

8. An internal combustion engine as claimed in Claim 3, wherein the
cylinder head is formed with a first elongate hole for installation of each
25 fuel injector, and a second elongate hole for installation of each tip end
section of the blow-by gas piping, the first and second elongate holes
being generally parallel with each other.

9. An internal combustion engine as claimed in Claim 1, further
30 comprising a partition wall for dividing inside of each intake port into
two axially extending air flow passages, and an intake air control valve

disposed upstream of the partition wall to control air flow of one of the air flow passages, wherein each tip end section of the blow-by gas piping is connected to the corresponding intake port at a position downstream of the intake air control valve.

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10. An internal combustion engine as claimed in Claim 1, wherein the blow-by gas piping includes a blow-by gas main pipe disposed above the cylinder head and extends in the longitudinal direction of the engine main body, and a plurality of branch pipes which extend from the

10 blow-gas main pipe and connected respectively to the intake ports.